

WHAT IS *NACADUBA MALLICOLLO MARKIRA* TITE?
A NEW SPECIES OF *NACADUBA* MOORE FROM THE SOLOMON
ISLANDS (LEPIDOPTERA: LYCAENIDAE)

W. JOHN TENNENT

*Biogeography and Conservation Laboratory, Department of Entomology, The Natural History
Museum, London SW7 5BD, UK*

(address for correspondence: 38 Colin McLean Road, Dereham, Norfolk NR19 2RY, England)

Abstract

Following recent collection of material in the Solomon Islands, the male holotype and female 'allotype' of *Nacaduba mallicollo markira* Tite from San Cristobal, Solomon Islands, are reassessed and found to belong to different species. *Nacaduba samsoni* sp. nov. is described from Nendo (Santa Cruz group), San Cristobal and Rennell Islands.

Introduction

In a synonymic list of the genus *Nacaduba* Moore, Tite (1963) paid particular attention to the south Pacific, describing several new taxa from the region, including *Nacaduba mallicollo markira* Tite from the large island of San Cristobal, at the eastern extremity of the Solomon archipelago. The taxon was described from a short series, including the male holotype (Figs 1-2) and female 'allotype' (Figs 3-4) collected by A. S. Meek at 'Markira harbour', on the south coast of San Cristobal, in 1908.

The group of polyommata lycaenid species which includes *N. mallicollo* Druce (*N. mallicollo*, *N. kurava* Moore, *N. berenice* Herrich-Schäffer) is in need of revision in the Solomon and New Hebrides archipelagos. Some species are notoriously difficult to separate using wing markings and identification is complicated by the fact that several species display marked individual variation. For example, either sex of *N. mallicollo* may be confused with corresponding sexes of *N. kurava* from some localities (but see discussion below regarding the Santa Cruz Islands) and the male genitalia of these species are similar. The genitalia of male *N. berenice*, with which *N. mallicollo* might also otherwise be confused, are diagnostic. Tite (1963) examined the genitalia of the *N. m. markira* holotype (Fig. 9), which correspond closely to those of nominotypical *N. m. mallicollo* from Vanuatu. The upperside of the female allotype of *N. m. markira* is similar in appearance to the female holotype of *N. m. mallicollo*, but the underside markings are quite dissimilar. Although Tite (1963) did not say so, the unusual appearance of the female of this pair may have initially attracted attention. The remaining specimens of the short type series (one male from Vella Lavella and two females from San Cristobal and Santa Ana) appear to conform to *N. mallicollo*.

As part of a study of Solomon Islands butterflies (Tennent 1998), the types of *N. m. markira* were examined in 1996. It was concluded that the two specimens may not be conspecific and that the unusually marked female may

be aberrant, although a lack of material made it difficult to pursue this suspicion. A series of nine females, together with a single male, collected on the island of Nendo in the Santa Cruz group in May 2000, suggested that the male holotype of *N. m. markira* was not conspecific with the allotype female and that the female was not aberrant but represented an undescribed species. A further female was collected on Rennell I. in August 2000.

Many *Nacaduba* species have similar underside patterns, characterised by a series of fine transverse lines. There is also usually a large subternal spot surrounded by orange and/or iridescent green or blue-green scales on the hindwing underside. Differences between some species are minor but despite marked sexual dimorphism on the upperside, underside markings are generally of similar appearance in the sexes of the same species. Figures 1-4 illustrate type specimens of *N. m. markira*, in which significant underside differences between the sexes (Figs 2, 4) may be observed. In particular, the subternal spot of the male is almost completely circled by pale orange and bordered iridescent green distally (a common *Nacaduba* feature), whilst the ternal spot of the female is boldly marked iridescent blue distally with no trace of orange.

***Nacaduba samsoni* sp. nov.**

(Figs 3-8, 10)

Nacaduba mallicollo markira; Tite, 1963: 82, pl. 1 (allotype ♀); misidentification.

Types. *Holotype* ♂, SOLOMON ISLANDS: Santa Cruz group, Nendo Island, Lata to Noipe, 60-140 m, 17.v.2000, W.J. Tennent (gen. prep. BMNH(V) 5974) (in The Natural History Museum, London [BMNH]). *Paratypes*: 3 ♀♀, same data as holotype; 1 ♀, same locality, 3.v.2000; 3 ♀♀, same locality, 5.v.2000; 3 ♀♀, same locality, 9.v.2000; 1 ♀, Rennell I., Tinggoa and road 10 km east, 8.viii.2000, W.J. Tennent; 1 ♀ ('allotype' of *Nacaduba mallicollo markira*), San Cristobal, Makira harbour [south coast], 1-8.v.1908, Meek (all BMNH).

Description. Male (Figs. 5-6) forewing length 16 mm; wing fringes dark brown, clearly tipped white (uniform muddy brown in *N. m. markira*); upperside bright mauve-blue (tinged pinkish in *N. m. markira*); underside pale grey-brown, basal markings indistinct; median and postmarginal markings white, spaces filled pale brown; submarginal area mainly white, with prominent series of crescent-shaped brown spots; subternal black spot large, edged iridescent blue-green distally with no trace of orange (all other *Nacaduba* species of the region, including *N. mallicollo*, have at least a trace of orange markings associated with the subternal spot). Genitalia (Fig. 10) similar to *N. mallicollo*; valva with hooked apex, directed inwards, approximately half the length of distal edge of valva (a slightly variable feature in some associated *Nacaduba* species; in the male holotype of *N. m. markira* [Fig. 9a] the hooked apex is significantly longer); distal edge with 7 (possibly 8) serrated 'teeth', larger than those of *N. mallicollo*; aedeagus shorter, more squat.



Figs 1-8. *Nacaduba* species. (1-2) *N. mallicollo markira*, holotype male (San Cristobal): (1) upperside, (2) underside; (3-4) *N. samsoni*, paratype female (San Cristobal) [*N. m. markira* 'allotype']: (3) upperside, (4) underside; (5-6) *N. samsoni*, holotype male (Nendo): (5) upperside, (6) underside; (7-8) *N. samsoni*, paratype female (Nendo): (7) upperside, (8) underside.

Female (Figs 3-4, 7-8) upperside superficially similar to *N. mallicollo*; upperside forewing with broad borders; median area pale blue, almost white, broken by veins, heavily suffused shining blue basally (less white overall, blue more dull in associated species); hindwing white, heavily suffused grey-blue; submarginal and marginal markings prominent; underside highly distinctive; fundamentally white; basal and median markings obscured; submarginal and marginal markings prominent, similar to male; subternal spot similar to that of male. A female from Rennell is more heavily suffused blue on the upperside and has more prominent underside markings.

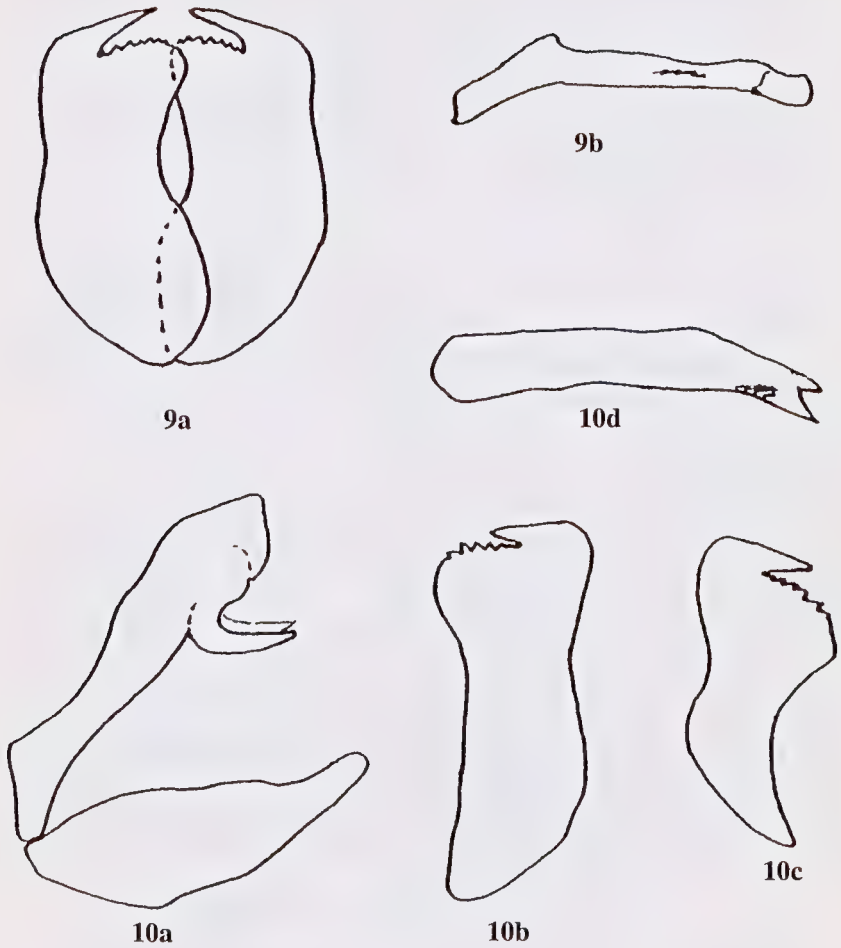
Etymology. The new species is named for Chris Samson, in recognition of his butterfly studies in the Solomon and New Hebrides archipelagos, including the Santa Cruz group (Samson 1979, 1980).

Distribution. Solomon Islands: San Cristobal, Rennell and Nendo (Santa Cruz).

Discussion

The author remained in the Santa Cruz group for several months in 2000 and collected extensively on Nendo whilst waiting for transport to the more remote islands of the group. The habits of *N. samsoni* were dissimilar to other *Nacaduba* and associated species present. Females were uncommon and had a deceptively slow flight. All were taken in flight or whilst feeding at the small white flowers of *Mikania micrantha* (Asteraceae). Males were apparently quite common, but extremely wary and could be seen in places where *Mikania* vines covered trees at considerable height, flying around vines 20-30 metres above the ground. Even at a distance, their pale undersides were distinctive and it was suspected, looking through binoculars, that this was the male associated with the very pale females already collected. On the few occasions when males were observed at lower levels they remained only fleetingly before returning to higher vegetation. Only one male was eventually collected.

Nacaduba samsoni is unlikely to be confused with any similar species on the island of Nendo. *N. kurava cruzens* Tennent occurs on the island; this is a distinctive subspecies with constant markings by comparison with subspecies elsewhere (Tennent 2000). *N. berenice* has not been reported from the Santa Cruz group. On Rennell, *N. kurava* has not been reported, whilst *N. berenice* has been recorded only from a single pair similar to *N. b. korene* Druce, collected in 1953 (Howarth 1962). The female of this pair is quite different in phenotype to the female *N. samsoni* recorded here from Rennell. *N. samsoni* may also occur on islands of Vanuatu, the type locality of *N. mallicollo*. Female *N. mallicollo* are invariably more blue on the upperside than *N. samsoni*, have at least some orange associated with the underside hindwing ternal spot and are rarely as white overall on the under surface, although some individuals may be difficult to separate.



Figs 9-10. *Nacaduba* species, male genitalia. (9) *N. mallicollo markira* (BMNH slide No. 24602; G.E.T 382), a, valvae (posterior view); b, aedeagus (lateral view); (10) *N. samsoni* (BMNH(V) No. 5974); a, genitalia (aedeagus removed) (lateral view); b, left valva (posterior view); c, right valva (posterior view, slightly angled); d, aedeagus (lateral view).

The island of San Cristobal and its satellites (Ugi, Santa Ana, Santa Catalina) have a higher proportion of endemic species and subspecies of butterfly taxa than any other island of the archipelago. The male of *N. m. markira* is very similar to nominotypical *N. m. mallicollo* from Vanuatu. Collection of further material in due course will no doubt establish whether the name *markira* is synonymous with *N. m. mallicollo*. As already intimated, a detailed revision is required to fully resolve the identity and distribution of this closely associated group of lycaenid butterflies.

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